ICS 87.040 PREDBEŽNÁ SLOVENSKÁ TECHNICKÁ NORMA Jún 2026

STN P	**Náterové látky Náterové systémy na listy rotora veterných turbín Časť 6: Stanovenie a hodnotenie priľnavosti ľadu s použitím centrifúgy (ISO/TS 19392-6: 2026)**	**STN P CEN ISO/TS 19392-6** 67 2030

Paints and varnishes - Coating systems for wind-turbine rotor blades - Part 6: Determination and evaluation of ice adhesion using centrifuge (ISO/TS 19392-6:2026)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 05/26

Táto predbežná slovenská technická norma je určená na overenie. Prípadné pripomienky pošlite do februára 2028 Úradu pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky.

Obsahuje: CEN ISO/TS 19392-6:2026, ISO/TS 19392-6:2026

Oznámením tejto normy sa ruší
STN P CEN ISO/TS 19392-6 (67 2030) z októbra 2024

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Supersedes CEN ISO/TS 19392-6:2024

English Version

Paints and varnishes - Coating systems for wind-turbine rotor blades - Part 6: Determination and evaluation of ice adhesion using centrifuge (ISO/TS 19392-6:2026)

Peintures et vernis - Matériaux de revêtement pour pales de turbines éoliennes - Partie 6: Détermination et évaluation de l'adhésion de la glace à l'aide d'une centrifugeuse (ISO/TS 19392-6:2026)

Beschichtungsstoffe - Beschichtungssysteme für Rotorblätter von Windenergieanlagen - Teil 6: Bestimmung und Bewertung der Eisadhäsion mittels Zentrifuge (ISO/TS 19392-6:2026)

This Technical Specification (CEN/TS) was approved by CEN on 23 February 2026 for provisional application.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Contents

Page

European foreword

This document (CEN ISO/TS 19392-6:2026) has been prepared by Technical Committee ISO/TC 35 "Paints and varnishes" in collaboration with Technical Committee CEN/TC 139 “Paints and varnishes” the secretariat of which is held by DIN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN ISO/TS 19392-6:2024.

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Endorsement notice

The text of ISO/TS 19392-6:2026 has been approved by CEN as CEN ISO/TS 19392-6:2026 without any modification.

Technical Specification

ISO/TS 19392-6

Second edition
2026-02

Paints and varnishes — Coating systems for wind-turbine rotor blades —

Part 6: Determination and evaluation of ice adhesion using centrifuge

Peintures et vernis — Matériaux de revêtement pour pales de turbines éoliennes —

Partie 6: Détermination et évaluation de l'adhésion de la glace à l'aide d'une centrifugeuse

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Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 139, *Paints and varnishes,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO/TS 19392-6:2023), which has been technically revised.

The main changes are as follows:

— in Clause 1 a note has been added to give more information on the different methods for the determination of ice adhesion;

— ISO 2808 has been added as a normative reference;

— in 8.3, in the seventh paragraph, considerations on the presence of mould were added;

— in 8.4, Table 1, a header and a separate column for the units were inserted;

— in Clause 9, Formula (1), $\bar{\omega}$ was corrected to the angular momentum ω and the explanation of symbols was updated;

— in Annex A an introductory sentence was added;

— in Table A.1 a separate column for the units was inserted.

A list of all parts in the ISO 19392 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Ice accretion on rotor blade surfaces of wind turbines can decrease the efficiency and limit the performance of wind turbines in cold, humid environments. Ice formation can also lead to damage of the rotor blade and can be hazardous, if ice falls off the blade. Icephobic coatings (“icephobics”) can be applied to rotor blade surfaces to reduce or prevent the adhesion of ice by removing ice prior to reaching a critical ice mass for the rotor blades. They can also increase the efficiency of thermal ice protection systems.

Technical Specification **ISO/TS 19392-6:2026(en)**

Paints and varnishes — Coating systems for wind-turbine rotor blades —

Part 6: Determination and evaluation of ice adhesion using centrifuge

1 Scope

This document specifies a method to measure ice adhesion from artificial ice on test substrates by using a centrifuge. Basic ice types are defined and test parameters for the ice removal are described to achieve reproducibility of test results for ice adhesion measurements for rotor blade coatings. This document does not intend to provide fixed test parameter to account for the diversity of relevant icing scenarios in this field of application.

NOTE In practice, ice adhesion can be determined by two different measurement principles, the centrifugal test (covered in this document) and the shear test, which differ in dynamic and quasistatic shear rates.

This test method can be used to test the adhesion of dynamic ice on the coating system of a wind turbine rotor blade under operation.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1513, *Paints and varnishes — Examination and preparation of test samples*

ISO 2808, *Paints and varnishes — Determination of film thickness*

ISO 4618, *Paints and varnishes — Vocabulary*

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*

ISO 21920-2, *Geometrical product specifications (GPS) — Surface texture: Profile — Part 2: Terms, definitions and surface texture parameters*

SAE ARP 5905A, *Calibration and Acceptance of Icing Wind Tunnels*